**WICKEDNESS WILL NOT WAIT: CLIMATE CHANGE AND PUBLIC MANAGEMENT RESEARCH**

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SUMMARY

This paper shows that climate change is a ‘wicked’ problem, which presents multiple challenges for public management. These challenges are already with us, but are likely to increase in the short and medium terms, possibly very rapidly.

Academic public management research appears to have been slow to address these issues. Yet potentially there are several strong points of contact between climate change issues and current PM research themes. This will, however, require interdisciplinary and international approaches.

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## Introduction

The aims of this paper are straightforward. First, I want to establish – briefly – why climate change is important for public management across Europe, and why its impacts lie not only in the future but already to a considerable extent in the present, and even the past. Second, I will ask how the academic public management community has responded so far. Finally, I try to identify some particular aspects of climate change and its consequences where public management research ought to be able to make a significant contribution.

## Why is climate change 'wicked', and why is it consequential for public management?

Climate change meets all the usual definitional requirements for 'wicked' policy problems. Its effects traverse many policy sectors. They concern local governments, central governments, intergovernmental organizations and international agencies. They also concern companies, civil society associations, families and individuals (Bulkeley and Newell, 2010; Giddens, 2011; Held et al, 2013). The 'problem' of climate change is composed of a complex myriad of interconnected sub-problems, and the whole assembly can be framed and defined in a range of different ways. Furthermore, many of the consequences lie in the future, with little or no present manifestation, and they are therefore 'hypothetical' and difficult for politicians to address and to weigh off against tangible current arrangements and benefits. Much of the crucial data is mathematical and probabilistic, the product of huge computer models, the architecture of which only a handful of scientists can understand. Finally, most projections of these problems strongly

suggest that they will impact on different countries and regions in different ways, and in some cases will even produce benefits (such as longer growing seasons for agriculture). All these features make climate change a 'wicked' problem which is all but impossible to handle effectively within 'normal' politics and 'normal' administrative processes.

The likely consequences of climate change for public management (hereafter PM) are numerous and, in many cases, large. In its 2013 Communication the EU Commission was relatively specific in spelling out what it considered public authorities would need in order effectively to adapt to climate change (European Commission, 2013). It noted that whilst 15 of the 27 EU member states have adopted adaptation stratgies, in most cases few concrete measures have yet been implemented. It went on to identify knowledge gaps that would require focused research. These included estimates of the costs (and occasionally benefits) of damage resulting from climate change, risk assessments at regional and local levels; frameworks and tools to assist in the evaluation of the various possible adaptation measures and means and indicators for monitoring progress. There will also be a need to develop new industry standards in the areas of energy, transport and buildings in order to ensure a more climate-resilient infrastructure (buildings, roads etc).

Some of the the implications of this analysis are quite clear. The EU public services of the future will require highly skilled analytic and evaluation capacities at all levels – local, regional, national and EU-wide. They will need to be able to develop strategic frameworks and design appropriate performance indicators (DEFRA, 2013, p13). This will itself entail working closely with climate scientists and acquiring sufficient scientific know-how to be able at least broadly to understand the nature of the main scientific debates. Public services will need staff trained in how to monitor progress within the adopted strategies. Numerous partnerships with corporations

and civil society associations will have to be constructed, guided and tracked – locally, nationally and internationally (Bulkeley and Newell, 2010, pp87-104). At the higher levels public authorities will have to collaborate across regional and national borders, which will call for a further set of diplomatic and negotiating skills, in addition to command of the relevant scientific knowledge. These requirements foreseen at the EU level are largely mirrored in some of the national reports (e.g. Swedish Commission on Climate and Vulnerability, 2007). Unusually, in the UK, the Coalition Government has tended to back away from new powers or even vigorous use of existing authority, preferring to believe that much adaptation will 'occur naturally and without the government's intervention' (DEFRA, 2013, p7). Most other EU member states have been willing to envisage a more pro-active stance, albeit in partnership with other actors. Actions will be required across a very wide range of policy sectors, including building regulations, transport, energy generation and distribution, healthcare and agriculture (climate change will affect growing seasons and the distribution of plant pests and diseases – see, e.g. EASAC, 2014).

Beyond this, however, there are other likely effects on an even larger and/or more dramatic scale. Dwindling water supplies and widespread inundation in certain parts of the world are predicted to generate substantial – sometimes desperate – population movements, as well as international conflicts over scarce resources. The relatively wealthy and less climatically hard-hit states of western and northern Europe could easily be faced with consequent aid, security and immigration problems. Climate change may also present terrorist groups with opportunities for various forms of environment disruption (German Advisory Council on Global Change, 2008; Maas et al, 2013).

In sum, we will need public service staff to be able to understand scientific and technological issues, and co-operate closely with scientists, technologists and engineers. We will need to develop larger capacities for working across organizational silos, across different levels of government, and in partnership with a range of non-governmental organizations, and with the public. Public authorities will also require both the authority and the capacity to measure and monitor a wide range of processes and effects, to construct scenarios, and to plan on the basis of resilience in the face of many unknowns and unpredictables. Project management skills will be in wide demand, not least because of the many changes to basic systems of energy generation and use that will be required to facilitate the transition to a lower carbon future (Bulkeley and Marvin, 2014). At the sharp end emergency services will need to be trained and equipped to handle more frequent instances of extreme weather, including storms, floods and heat waves. Development ministries, border authorities and the military may be required to respond to new external demands and pressures (German Advisory Council on Global Change, 2008; Mayer, 2012). Governments and public services will inevitably be involved in all these activities and more. They will be in the front line for both mitigation and adaptation. Their claims to legitimacy as guardians of the public interest and protectors of the common citizen will be tested to the limit by 'the greatest collective action problem the world currently faces' (Bulkeley and Newell, 2010, p111)

Why won't it wait?

Climate change won't wait for two basic and easily understandable reasons. First, it is already with us. Second, both mitigation and adaptation strategies include many changes which are medium or long term: they will take many years to be fully in place and having their full effects.

That climate change is already with us is not always realized, or necessarily accepted. The problem is that no single, individual weather or tidal event can be certainly attributed to global warming. However, the balance of scientific opinion is that the more frequent incidence of various types of 'extreme' event (storms, floods) and the measured acceleration in certain key processes (e.g. the melting of the Greenland icecap) are indicators of the more general warming phenomenon (IPCC, 2007, pp2-5; IPCC, 2014). Among many recent occurrences which have been frequently attributed to global warming we have the multiple impacts of the heatwave of August 2003, including almost 15000 excess deaths in the greater Paris area alone (Meteorological Office, 2014), the flooding and storm damage to extensive areas of the UK during the Winter storms of early 2014 (Brahic, 2014; Carrington, 2014), the Australian drought (Olson and Paglia, 2008) and the widespread damage to North American forests caused by the spread of the pine beetle (Doelle et al, 2012). Even if these events were *not* the direct result of global warming they would nevertheless be exactly the kind of things that we could expect to see more of in the near future, as a result of climate change induced by humankind.

What is more, whereas the dominant view on climate change used to be that it was a gradual process, since 2005 or so the main scientific consensus has given more space to notions of sudden changes – 'thresholds' and 'tipping points' (Mayer, 2012). Some of these may lie in the nearer future, and therefore longer term gradualist strategies (even if they were in place and being implemented) might well prove seriously inadequate. Current research on political and institutional leadership does not yet offer much help with the possibility of 'cascading' ecological crises that will abruptly traverse systems, scales and national borders (Galaz et al, 2011).

Nevertheless, some central elements in any mitigation strategy and many adaptation strategies are unavoidably long term. There are some processes – building new flood defences, changing patterns of energy generation and consumption, changing modes of transportation, retrofitting buildings to cope with more extreme weather – which would take years rather than weeks, even if they were started today by a determined, authoritative, well-resourced government. These are examples of a type of activity that, although well-known to practitioners, have received only limited study in academic public policymaking and management circles (Pollitt, 2008, pp16-20).

How far has public management research responded to the challenge?

Regrettably, it is hard to exaggerate how feeble the response of the academic public management community to climate change has been thus far. Political scientists (e.g. Giddens, 2011; Joss, 2014: Vogler, 2014), sociologists (e.g. Mayer, 2012 ), geographers (e.g. Bulkeley and Newell, 2010), business studies academics (e.g. Linnenluecke and Griffiths, 2015) and economists (e.g. Toi, 2014) have all generated considerable literatures which address the specific implications of climate change. Public management has not.

If we examine the recent contents of the leading US and Europe-based public management journals the picture is clear. The journal with consistently the highest impact factor is the US-based *Journal of Public Administration Research and Theory* (JPART). Over the period 2010 to 2014 JPART published a total of 220 main articles, of which just two featured climate change as a sufficiently important focus to be worth mentioning in the abstract or title. Neither of these dealt with the consequences of climate change or the implementation of policies. One included the Intergovernmental Panel on Climate Change as one of three case studies of scientific advice to governments. The other studied the role of power brokers in Swiss climate policy.

The highest impact European-based journal is *Public Administration*. Over the same five year period it has published a total of 327 main articles, of which three dealt directly with climate change. However, these three focused on policymaking and said little or nothing about implementation (Carter and Jacobs, 2014; Doelle et al, 2012; Galaz et al, 2011). During this period *JPART* and *Public Administration* published many papers on accountability, performance management, transparency, public participation, public service motivation, networking and governance, but virtually none of the papers dealing with these fashionable ideas tried to apply them to climate change.

We can also look at an avowedly internationalist journal – the *International Review of Administrative Sciences*. Since the beginning of 2010 *IRAS* has published a total of 184 main articles. A higher proportion of these have been comparative or have focused on international organisations than in either of the other two journals, but unfortunately not one of these many papers has had climate change as a main focus.

Finally, a brief exercise in comparing the official and semi-official scientific literature on climate change with the mainline central government publications on public management reform found virtually no connection between the two (Pollitt, 2014). There were lots of government scientific publications warning about the consequences of climate change but official government discourse on public management reform appears to proceed on its own, separate track. Just as in top-end academic publishing in PM, public management reform itself rolls on, engaging only minimally with the multifarious issues for the field which are posed by climate change.

<u>What could be some of the more fruitful areas for research?</u>

What is curious – and a little frustrating – is that a number of themes which have been lively within academic PM in recent years are actually of considerable potential relevance for climate change, but have not yet been much applied to it.

One obvious area where public management research could make a contribution to the multi-disciplinary debate over climate change is that of policy implementation. Many of the climate change-related studies coming from other disciplines say little about implementation or, if they do, say it in rather simple, under-theorised ways. They tend to focus more on the difficulties of reaching agreements rather than on how things actually get done once the agreements have been proclaimed and ratified (e.g. EU-Asia Dialogue, 2014; Doelle et al, 2013). In public management, however, there is a long tradition of studying implementation as a sub-field in its own right (e.g. Hill and Hupe, 2008, Peck and 6, 2006; Pressman and Wildavsky, 1973; Saetren, 2005). It is widely recognized that a formal decision to pursue a given policy is merely an early chapter, rather than the conclusion in the winding, twisting story of what eventually happens on the ground (e.g. Pollitt, 2002).

A second, perhaps even more obvious potential application is the substantial body of recent writing on 'horizontality', multi-level and joined-up government, and 'whole-of-government' approaches (e.g. Bogdanor, 2005; Christensen and Lægreid, 2007: Davies, 2009; Pollitt, 2003). Whether locally, centrally or internationally, efforts to mitigate or adapt to climate change will, of their very nature, require more and better co-ordination between different organizations and sectors. '[T]he nature of climate change as an issue means that it spills over into the governance of other sectors, such as energy, trade, industry, agriculture and housing, to name but a few' (Bulkeley and Newell, 2010, p106). 'Existing research focuses primarily on single crises being

managed by one nation, or a specific national political body, policy sector or organization' (Galaz et al, 2011, p).

Third, we have the now enormous PM literature on network management and partnership. This is also highly relevant here, since public authorities tackling climate change will need to work in co-operation with a wide range of other stakeholders, both in the for-profit private sector and non-profit 'civil society'organizations (e.g. Agranoff, 2007; Bel et al, 2014; Koppenjan and Klijn, 2004; Klijn, 2008).

A fourth area of potentially relevant scholarship within public administration is that of citizen attitudes and beliefs and - stemming from those attitudes and beliefs - the co-production and involvement of the public in public services (e.g. Alford, 2009; Llewellyn et al, 2013). More recently this has shaded into discussions of the applications of behavior-changing incentives ('nudges') and the rise of the 'psychological state' (Jones et al, 2013). 'This shift in public policy has been driven by the rising influence of psychology and related behavioural sciences within public policy development' (Jones et al, 2013, pvii). Public management scholars are just beginning to engage themselves with this trend.

Fifth, it is evident that the sheer novelty and complexity of many possible climate change policies means that monitoring and evaluation will be critically important. Some good ideas will fail, and others will succeed. Many will work in one context and fail in another. There will therefore be a huge demand for high quality information about what is working when, for whom and in what contexts (Pawson, 2014). As a contribution to this challenge we can draw on roughly half a century of close debate about evaluation and evidence-based policymaking (Davies et al, 2000; Pawson, 2014)

Yet there is something more fundamental than any of these five promising areas of theory and evidence. That is a willingness to work in an interdisciplinary manner with other social scientists and natural scientists. This is more easily said than done. There are career and bibliometric pressures in our silo-ed academic life to stay in the silo – to publish in 'pure' journals, not hybrids and to build up an ever-more detailed knowledge of what the leaders of our little subfield have said and written, rather than reach out to those from other fields and disciplines. Investing time and energy in getting to know another academic field well enough to communicate and co-operate with it often looks like a risky choice.

## Conclusions

PM has always been an academic field with a strong practical and applied dimension as well as a (sometimes more introverted) theoretical and model-building 'arm' (Bouckaert and Van der Donk, 2010; Raadschelders, 2011). Both dimensions are sorely needed in the battle to mitigate and adapt to climate change.

There is much for PM scholarship to contribute, but our community is making a late start. Curiously, for a field with such a continuously interdisciplinary history, PM is not only late but also academically just a little isolated. In recent years it has perhaps become even more introspective, puzzling away on its own themes and theories and often not connecting with other, contiguous fields, apart, perhaps, from politics and business studies. PM scholars not only study organizational silos, they often work in them. Only a handful of European academic centres integrate public policy and management scholars with other social scientists *and* with technologists and natural scientists, in order to study climate change and other global 'mega risks' (for example the Climate Change and Sustainable Futures team at Exeter University, the

Stockholm Resilience Centre and WIPCAD at the University of Potsdam). Units of this kind are potentially capable kind of the kind of problem-oriented, interdisciplinary work which is vital if the monster that is climate change is to be tamed before it wreaks further and greater havoc with our everyday lives. But they need time and resources to practice the most fruitful ways of working together, and we (Europe) needs more of them.

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